

THREE FOR TOMORROW:

We All Die Naked

BY

JAMES BLISH

The name of James Blish first appeared on the contents page of a science-fiction magazine in 1940; he published a scattering of stories in the early war years, then returned to writing in 1948 and quickly established himself as one of the outstanding authors in the field. His novel, *A Case of Conscience*, received the 1959 Hugo as best book of the year; among his many other novels are *Black Easter*, *The Seedling Stars*, *Doctor Mirabilis*, and *Earthman, Come Home*. He served as Vice President of the Science Fiction Writers of America for two terms beginning in 1966.

[This story is dedicated to Philip K. Dick, who once suggested that something like it would be the logical successor to such novels as *The Space Merchants*, *Gladiator at Law* and *Preferred Risk*—to say nothing of *If This Goes On*. At the time, I thought he was kidding.—JB]

We All Die Naked

The good is oft interred with their bones;

So let it be with Caesar.

When Alexei-Aub Kehoe Salvia Sun-Moon-Lake Stewart, San. D., went out for lunch, he found half a dozen men with jackhammers tearing up the street in front of the building, the chisel blades of their drills cutting the slowly bubbling asphalt into sagging rectangular chunks. The din was fearsome, and a sizable necklace of teen-agers was dancing to it, protected from the traffic by the police barricades across both ends of the block. In their gas masks they reminded him, after a moment's assiduous mental groping, of some woodcut from the *Totentanz* of Hans Holbein the Younger.

Not that he was any beauty himself, even out of a gas mask, as he had long ago

resigned himself. He was fair-haired, but no Viking—in fact, he was on the short side even by modern undernourished standards, and what was worse, chubby, which caused strangers to look at him with that mixture of jealousy and hatred the underfed reserve for people whom they suspect of stuffing themselves at the public trough. In Alex's case, as all his acquaintances knew, they were absolutely right: as the head of a union under stringent government control, he was even technically only one step removed from being a public employee, and he could not blame his chubbiness on a metabolic defect, either; the fact was that he felt about food the way Shakespeare had felt about words. Nor, at forty, was he about to undertake any vast program of dietary reform. As for his face, it had been broad to begin with, and the accumulation of a faint double chin now made it look as though it had been sat upon by some creature with gentle instincts but heavy hindquarters. Oh well; since like everyone else he had been born into an atmosphere, and an ecology in general, which was a veritable sea of mutagens, he felt he had to think himself lucky that his nose wasn't on upside down, or equipped with an extra nostril.

As for the dancing teen-agers, they also made passage along the sidewalk even more difficult than it usually was at this hour, but Alex didn't mind. He watched them fondly. They consumed, but did not produce. And it was a privilege to be allowed to walk at all. In downtown Manhattan, you either owned a canoe (if you were wealthy) or traveled by TA barge, and left your office by a second-story window.

Twenty years ago, he liked to remember, Morningside Heights had consisted mostly of some (by modern standards) rather mild slums, completely surrounding the great university which had been their landlord. Today, like all other high ground in the city, the Heights was a vast skyscraper complex in which worked only the most powerful of the Earth. Lesser breeds had to paddle for it in the scummy, brackish canals of Times Square, Wall Street, Rockefeller Center, and other unimportant places, fending off lumps of offal and each other as best they could, or jamming over the interbuilding bridges, or trying to flag down an occasional blimp. Flatlands like Brooklyn—once all by itself one of the largest cities in the world—were of course completely flooded, which was probably just as well, for the earthquakes had been getting worse there lately.

The most powerful of the Earth. Alex liked the sound of the phrase. He was one of Them. As the General President of Local 802 of the International Brotherhood of Sanitation Engineers, he had in fact few peers, and not only in his own estimation. Doubtless such a figure as Everett Englebert Loosli Vladimir Bingovitch Felice de Tohil Vaca, by virtue of his higher lineage and his still higher post of U. S. Secretary of Health, Education, Welfare, and Resources (Disposal of), was the more honored; but it was doubtful that with all his hereditary advantages he could be the more cultured... and the next few weeks, Alex thought, would show which of them was truly the more powerful.

Adjusting his mask—no matter how new a mask was, it seemed to let in more free radicals from the ambient air every day—he put the thought resolutely aside and prepared to enjoy his stroll and his lunch. Today he was holding court with the writers, artists, and musicians in his circle—people of no importance whatsoever in the modern world, except to him; he was their patron. (Patroon, he corrected himself, with a nod toward the towers of Peter Stuyvesant's water-girdled village.) One, whom he might even consider making the next of his wives if she continued to shape up, he had even licensed to keep cats, creatures as useless as aesthetes in this hardening civilization, though a good deal less productive of solid wastes.

Nevertheless, he could not prevent himself—he was, after all, first and foremost a professional—from wondering how the masked men with the jackhammers were going to dispose of the asphalt they were cutting up. The project itself made sense: asphalt paving in a town where the noontime temperature rarely ran below eighty degrees ranged narrowly between being a nuisance and a trap. The dancers' shoes were already being slowed down by plaques and gobbets of the stuff. Nevertheless, it was virtually indigestible; once the men had dug it up and taken it away, where were they going to drop it? There was an underground tar pool in Riverdale in which such wastes were slowly—far too slowly—metabolized into carbon dioxide and water by an organism called *Bacillus aliphaticus*, but it was almost overflowing now and the sludge was being pushed up toward the top of the reservoir by the gas-trapping stickiness of the medium, like a beer with its head on the bottom. The time wasn't far off when the sewers of Riverdale would begin to ooze into its valleyed avenues not ordinary sewage, but stinking condensates so tacky and... indisposable... as to make hot asphalt seem as harmless as cold concrete. Nor was carbon dioxide a desirable end product any more...

But never mind all that now. Alex knocked at the door of the Brackette de Poisson, was recognized, and was admitted. At his table his coterie was waiting, and hands were lifted solemnly to him. His glance had only just sought out Juliette Bronck in the dimness when Fantasia ad Parnassum rose ceremonially and said:

"Ave, garbage-man."

Alex was deeply offended—nobody used that word any more—and worse, he was afraid it showed. People ought to understand that it is difficult to be friends with friends who won't respect one's sensitivities. But there was worse to come.

"Listen," Fantasia said with quiet vehemence. "Sit down. Drop your shovel. You won't need it any more."

"Why not, Fan?"

"Why not?" Fantasia made a production of being astonished. At last he added,

"God damn it, Alex, don't you know yet that the world is coming to an end?"

So here we go again; Fan has a new hobby. It didn't look, after all, like it was going to be a very pleasant lunch.

"All right," Alex said with a sudden accession of weariness. He sat down and looked around the table, trying to beam benevolently. It shouldn't have been difficult. After all, there was Juliette, a cameolike, 26-year-old, bikini-sized brunette who, in fact, at the moment was dressed in very little else; Will Emshredder, a tall, cadaverous, gentle-voiced man who had once produced a twelve-hour-long Experience called The Junkpot Philosophy; Rosasharn Ellisam, who was a cultural heroine of Alex's, since she made welded sculpture out of old bones which otherwise would have had to have been disposed of in some other way; Goldfarb Z, a white Muslim who for years had been writing, in invisible ink, a subliminal epic called thus i marshal mcmoonahan; Strynge Tighe, a desperate Irishman clad entirely in beads made of blue-dyed corn, who specialized in an unthinkable ancient Etruscan verse form called txckxrism; Beda Grindford, famous as the last man to get out of Los Angeles before the cyclone hit the Hyperion plant, but for nothing else; Arthur Lloyd Merlyn, a genuine, hereditary drip who was spending his life looking for somebody to put a plug in for him; Bang Jfhnsund, who wrote an interminable 3V serial named The T.H.I.N.G. from O.U.T.B.A.C.K.; Girlie Stonacher, a blond model who had been a hostess on the blimp limousine to the lunar orbital shuttle until all commercial lunar flights had been discontinued; Fantasia's wife, Gradus, possibly the most beautiful woman since Eleanor of Aquitaine, who went about totally naked and would cut you to ribbons if you gave the faintest sign of noticing it; Polar Pons, who by virtue of being nine feet tall was in great demand as a lecturer; and, of course, the usual youngsters, who didn't count.

And, also of course, the inevitable thorn in the side of any such group, in this case Fantasia himself; there was always one. He was a smallish but handsome man of about fifty who exacerbated Alex, first of all, by having the largest and most distinguished lineage of any man in America, so distinguished that a mere list of his names read like three pages of a hotel register from the heyday of the Austro-Hungarian Empire; secondly, by having become wealthy in a blamelessly social way by a number of useful inventions (for example, he had invented a container for beer which, when the bottle was empty, combined with smog and dissolved down to its base to leave behind a cup containing one more swallow of beer, after which the base itself turned into counter polish); third, by being willing to argue on any side of any question, without seeming to care which side he was on so long as he could make a case for it (that was, in this gathering of artists, his art); and last (or almost last), by turning out to be right nearly every time Alex had been sure he had caught him out in his facts.

Alex nevertheless rather loved him, and got along with him most of the time by

refusing to believe that he took anything seriously. But this time, for the first time, Fantasia had genuinely insulted him; and—

"—the end of the world," Fantasia said grimly.

"Carry a sign," Alex said, picking up the menu with his very best indifference. He would have liked to have had Alaskan king crab, but it was extinct; the sea-level Guatemalan ship canal of 1980 had let the Atlantic's high tides flow rhythmically into the Pacific, with results similar to but much more drastic than the admission through the St. Lawrence canal of the lamprey eel into the Great Lakes. Today's Special was neon shrimp; knowing where they came from, Alex lost his appetite. He put the card down and looked at his sudden antagonist.

"Listen, dammit."

"Eri tu, Brute?"

"Alex," Fan said with a sort of disturbing tenderness, "you won't get out of this with dub macaronics, even with garbage sauce. Don't wince, it's time we called things by their right names. I've been doing some figuring, and no matter how I look at it, I think we're dead."

Juliette took Alex's elbow, in that gesture which said, Don't listen, don't let him hurt you, I'll make it all up to you later; but Alex had no choice. He said, snake to mongoose, "Go ahead."

After the last gasp, and the last plea not to tumble off just yet, Alex arranged his feet among the cats and was on the shimmering verge of oblivion when Juliette said: "Alex, are you asleep?"

He sighed, kneed away a cat with the demeaning name of Hausmaus, and propped himself up on one elbow. Beside him, Juliette exuded warmth and the mixed perfumes of spray deodorant and love, but her expression was that of a woman who now, at last, meant to get down to the real business of the evening. Thrusting a big toe vindictively into the ribs of the fat Siamese called Splat!, he said, "No, not lately. What is it?"

"Do you think Fan is right?"

"Of course not, he was just showing off. You know damned well that if I'd agreed with him, he'd have switched sides on the spot. Now let's get some sleep. School keeps tomorrow, for me at least."

"But Alex, he sounded so... convinced. He said, 'No matter how I look at it.'"

"He always sounds convinced. Look, Juli, of course we've got a junk problem. Everybody knows that. Who could know it better than I do? But we're coping. We always have coped. People have been predicting disaster for twenty years and there hasn't been any disaster. And there won't be."

"He did seem to have all the figures."

"And it wouldn't surprise me if he'd got them right. They sounded right, where I was familiar with them. But what Fan doesn't take into account is the sheer mass of the Earth—including the sea and the air, of which there's a hell of a lot. You can't create any major changes in a body that big just by a little litter. Making changes like that takes geological time."

"Are you sure?"

"Of course I'm sure. Go to sleep."

Go to sleep...

Some kinds of wastes—weather, rust, decay—are metabolized, or otherwise are returned to balance with the general order of nature. Others are not.

Among those which are not are aluminum cans, glass bottles, and jugs, and plastic containers of all kinds. The torrent began in 1938, when in the United States alone about 35 million tons of these indigestible, unreclaimable, nonburnable, or otherwise infeasible objects were discarded. By 1969, the rate was three quarters of a ton per year for every man, woman, and child in the country, and was increasing by 4 percent per year. That year, Americans threw away 48 billion aluminum cans, 28 billion glass bottles and jars, and uncountable billions of plastic containers of every conceivable size and shape... 140 million tons of indestructible garbage.

By 1989, the total for the year had reached 311 million tons. None of it had ever gone away. The accumulation—again, in the United States alone—was 7,141,950,000 tons.

Which is not to say that no attempts were made to cope with it. Cans that contained any iron at all were fished out by magnets. Some of the glass was pulverized to grains finer than sugar and fed into great cesspools like Lake Erie,

where, since glass is slightly soluble in water, it would very slowly become a dissolved pollutant. But since glass had been being broken and thrown away since the Phoenicians invented it, the pulverizing composters made no measurable difference in the world's rising burden of grit, slag, and ashes.

In the meantime, nylon "ghost nets" broke free from fishing vessels and were set floating as permanent fish destroyers. The composters tore up nylon stockings and socks into eight-inch fragments, which, however, refused to rot. Heavy concentrations of polyethylene continued to build in truck-garden soil, spread by compost plants which were supposed to be selling humus. Eventually, many of the polyethylene bags and plastic containers were screened out for burning, but almost nothing was known about what happens when plastics burn, and in fact most such polymerized substances simply evaporated, adding to the enormous load of air pollution, which by 1969 had reached the highest levels of the atmosphere from jet exhausts. By 1989, the air of the whole world—thanks to the law of the diffusion of gases, which no White House Office of Science and Technology had thought to repeal—was multiply ionized and loaded with poisons ranging from simple industrial gases like sulfur dioxide to constantly recomplexing hydrocarbons, and emphysema had become the principal cause of death, followed closely by lung cancer. Skin cancer, too, was rising in the actuarial tables, in incidence though not in mortality; the wide and beautiful sky had become a sea of carcinogens.

Masks were introduced, but of course nobody could stop breathing and emitting carbon dioxide. In 1980 there were 4,500 million human carbon dioxide emitters on the Earth—very few of other species—and so much of the world had been paved over, or turned into desert, that the green plants had long lost the battle to convert the gas into oxygen and water vapor. The burning of fossil fuels, begun in prehistory among the peat bogs, might have fallen off with the invention of nuclear power, but the discovery in 1968—when nuclear power was still expensive to exploit, and which produced wastes so long-lived and so poisonous that people had the rare good sense to be terrified of them while it was still early enough to cut down on their production—of the Alaskan oil field, the fourth largest in history, aborted the nuclear boom and produced a new spurt in burning. The breathers, in the meantime, continued to multiply; by 1989 nobody knew what the population of the world was—most of the statistics of the increase had been buried under the statistics for the increment of garbage.

Carbon dioxide is not a poisonous gas, but it is indefatigably heat-conservative, as are all the other heavy molecules that had been smoked into the air. In particular, all these gases and vapors conserved solar heat, like the roof of a greenhouse. In due course, the Arctic ice cap, which had been only a thin sheet over a small ocean, an ocean furthermore contained in a basin also heat-conservative, melted, followed by the Greenland cap. Now the much deeper Antarctic cap was dwindling, dumping great icebergs into the warming Antarctic

Ocean. Great fog banks swept around the world, accelerating the process and chelating the heavier gas molecules as they moved, making them immune from attack by oxygen, ozone, or the activating effects of sunlight. The fogs stank richly of tars and arsenes, and were thicker and yellower than any London had seen in the worst years before the Clean Air Act had been passed.

And the ice continued to melt. Sea level in 1989 was twenty-one feet higher than it had been in 1938; every harbor in the world had been obliterated, every shoreline changed, and the brokers of lower Manhattan had been forced to learn to paddle. The worldwide temperature rose; more bergs fell into the Ross Sea; the last Ice Age was over.

Sleep, my child, and peace attend thee...

For some reason, Alex awoke just before dawn. Disgruntled, he went to the head, had a long drink of water, took a tranquilizer, roughed up Splat!'s fur along the back until he purred with contented indignation and bit him, peeked lubriciously at Juliette in her cocoon, constructed what replies he might have made to Fantasia at lunch had he not been taken so completely aback, and finally lay down again; but nothing served—he was completely alert.

Then he remembered: Today was the day of his appointment with Secretary de Tohil Vaca, and the beginning of their test of power. Suddenly Fan's irresponsible hypothesizing, and the poses, hobbies, crotchets, and vapors of the rest of the coterie, suddenly even Juliette herself, fell into perspective. He was back in the real world, where nothing ever changed unless you made it change, and never mind those who merely talked. Reality was what counted.

Swinging out of the warm bed with some reluctance, he sat on the edge until his hypotensive dizziness had passed, then washed, shaved, dressed, turned off the alarm—no point in having it wake Juli, since he had anticipated it—and kissed her on the end of the nose. She murmured disturbedly, "Lemonade," as though she were having some peculiarly private dream, and resettled herself. She still exuded that unpublic, compound, organic fragrance which was her gift to him, and for a moment he felt a desperate urgency to pull off all his clothes and other arrangements and lie beside her again; but at the same moment of the impulse, he happened to see the teddy bear on her dresser, which, though it made her seem more pathetic, and the room even tinier, also re-reminded him of the substantial world.

Well, but he would protect her. Part of protecting her was the matter of coping with the real world. He checked the contents of his briefcase carefully in the false dawn, and then left, closing the door very quietly.

Some forty-five seconds later he was fumbling with the key before her door and fuming with loveless indignation. He had forgotten to feed the goddam cats.

Juli's apartment was on the fifth and only habitable floor of what had once been a moderately expensive apartment building in the Chelsea district. Occasionally, the landlord managed to rent out a fourth-floor flat at reduced rates to some gullible and desperate family, on the showing that even high tide did not reach that far; but they seldom lasted a month, or until the first storm sent waves breaking over their windowsills.

Luckily, there was no wind today, nor even any rain. Alex put on his mask, settled his stretch homburg carefully atop it, and went down the hallway. Rats scurried and squeaked ahead of him. Juli let the cats roam free in the building after she got up, but the rats always came back; unlike the cats, they could swim.

The canoe was lashed to the balcony of the fire escape, swung on davits, an arrangement kindly rigged by Fantasia; Alex himself could not so much as tie a knot without getting his forefinger caught in it. The tide was down today, and after settling himself in the canoe, he took a full five minutes lowering it gingerly to the greasy surface of the water. Once he had cast loose, however, he paddled up Eighth Avenue with fair skill and speed, an ability which was a by-product—not achieved without many spills—of the affair with Juli.

Thanks to the earliness of his awakening, there was not much traffic yet. Even the few barges he passed were half empty, the identical masked faces peering out of them looking as disconsolate as he felt to be up at this hour. At Thirty-Second, a street-sweeper went by him going the other way, sucking into its frontal maw everything that floated except the traffic, and discharging from its almost as capacious anus anything that did not clink, clank or crunch. The theory behind the monster, which had been designed over a decade ago, was that anything that did not make a noise as it passed through its innards could safely be left in the water for the fish and bacteria.

Actually, of course, there were no fish anywhere near this close to shore any more. There were not many even in the high seas. The Guatemalan canal had resulted in the destruction of about 23,000 Pacific species, through evolutionary competition, but the destruction in the Atlantic had not been that selective. It had begun with the poisoning of the Atlantic phytoplankton, the very beginning of the chain of nutrition for all marine life, by land effluents loaded with insecticides and herbicides. The population of the Atlantic from pole to pole, from brit to whales, was now only 10 percent of what it had been when the street-sweeper had been on the

drawing boards. As for the bacteria, the number of species of molecules they could not digest now far outnumbered those that they could.

Nevertheless Alex waved to the monster as he went by. Obsolete or not, it belonged to his own working force. The men piloting it waved back. Though of course they did not recognize him in his mask, it was known that the boss often went to work this way: if somebody in a canoe waved to them, it was safer to wave back. Slllrrrrppp ... Sprrrrsttt, said the monster.

The city was waking up now. Outboard-powered car pools of men in wet-suits, painted to look tailored, were beginning to charge along the cross-streets, creating wakes and followed by the muffled obscenities of people in canoes. Most of these came across the Hudson from New Jersey, which had had a beautifully planned new city built north of Newark, on what had been the tidal swamp of the Meadows, only to have its expensively filled and tended lawns become swamps again and then go totally under water. Few of the commuters paid any attention to the traffic semaphores, having learned from experience that the rare police launches were reluctant to chase them—the wakes of the launches upset more canoes and rowboats than the speeding outboards did. Lately, some of the paddlers and rowers had taken to chucking sash weights over the gunwales of speeders when possible. The police were prone to ignore this, too, though they frowned at outright shooting.

Alex observed all the semaphores scrupulously and reached Forty-Second Street without incident. There, before turning starboard, he took off the homburg, stowed it in its plastic bag, and put on his crash helmet.

Again, thanks to the relative earliness of the hour, he had been able to thread his way through the jam of barges shipping produce into and out of what had once been Penn Station with considerable speed, but Times Square was another matter. There was no time after dawn when it was not a mass of boats of all sizes, many of them equipped with completely illegal rams and spikes, many locked together willy-nilly in raftlike complexes, the occupants swearing and flailing at each other with oars, paddles, barge poles, whips, boarding hooks, and specialized assegailike weapons developed by the more ingenious. There was no alternate route to where Alex was going that was any better.

The police concentrated here as a matter of course, which prevented individual acts of mayhem from fulminating into outright riot, and often managing to keep some sort of narrow canal open in one direction or another. Alex watched for these canals, and those that opened accidentally now and then, with the intensity of a mariner trying to pass through the mythical mazes of the Sargasso. He had learned long ago that picking fights with other boats was a waste of time. The only weapon that he carried was a table-tennis racquet sided with coarse sandpaper, with which he banged the knuckles of people in the water who tried to climb into his canoe. He

did this completely impersonally and without malice; he knew, as the stragglers should have known, that it is impossible to get into a canoe from the water without upsetting it.

He took only two paddle blows elsewhere than directly on the helmet, which he thought must be a record for the course. Past Sixth Avenue, the furtive canals got wider and tempers tended to have cooled a little. By the time he reached the Public Library—whose books were now no more inaccessible to the public than they had been fifty years ago, though the reason had changed—he felt justified in removing the helmet and resuming the homburg. There was remarkably little water in the scuppers and he himself was only moderately splashed—the latter of no moment at all, since his clothing was entirely by Burberry and all he needed to do once he arrived was step into one of the Bell System's booths, deposit a quarter, and have the random garbage showered off with salt water.

All in all, he thought as he turned the canoe over to an Avis docker, it was a good thing that he hadn't been able to sleep. The trip had been an out-and-out snap.

Secretary de Tohil Vaca was a tall, fair, bearded man of almost insufferable elegance of manner. Ringed and ringleted, perfumed and pomaded, fringed and furbelowed, beaded and brocaded, he combined nature and nurture so overpoweringly, in fact in such an absolute assonance of synesthetic alliteration, that it became a positive pleasure to remind one's self that the underlying essence of his official cachet, like the musk of sex and the ambergris of the most ancient perfumes, was—Alex bit silently but savagely down on the word—garbage.

His office was on the top floor—in fact, was the top floor—of the old Pan Am building, which was itself one of the principal monuments to the ways junk had been piled up willy-nilly in the heyday of the Age of Waste. The building itself still sat over the vast septic tank which had once been Grand Central Station, a tank over which the tides gurgled semidaily without in any way slowing the accumulation of filth in those deep caverns and subway tubes. Most of the immense, ugly structure, which had always looked like the box some other building had been shipped in, was now occupied only by tax accountants, 3V producers, whores, mosquitoes, anthologists, brokers, blimp-race betting agencies, public-relations firms, travel agents, and other telephone-booth Indians, plus hordes and torrents of plague-bearing brown rats and their starving fleas.

Secretary de Tohil Vaca, however, reached his office, when he did, by private blimp, much accompanied by hostesses and secretaries rather like Girlie Stonacher; and he had been known, when he was in a rare hurry, to settle down upon the top of it by air-polluting helicopter. Rank had, as it is written, its privileges.

The office was flooded with sunlight from all sides when the smog let it through, and was hung alternately with Aztec tapestries and with modern collages of what was called the Reconstituted Findings school. The air was cool and almost odorless, and usually carried, as now, a discreet purring of music. In apparent—but only apparent—deference to Alex, the system was now playing a version for four exhaust-flutes of Hector, the Garbage Collector, the eighty-year-old anthem of Local 802. It was all very well prepared, but Alex was not going to be seduced. He not only knew what he wanted, but knew that he had to get it; he was, after all, as much a creature of his constituency as de Tohil Vaca was of the administration.

"Sit down, Alex," he said affably. "I'm sorry this meeting has been postponed so frequently, but, you'll understand, I'm sure, there have been other pressing matters..."

The Secretary waved vaguely and allowed the sentence to trail off. Alex thought he understood well enough: the Secretary had sought to convey the impression that the Administration did not regard the matter as serious and could, if it had to, get along very well without the services of Local 802. They both knew this to be nonsense, but the forms had to be gone through. Now that he was actually in the presence, however, Alex found this diagnosis weakening a little. The Secretary's expression was that of a man rather grimly amused by some private piece of information, like that of a wife accepting flowers from a husband she knows is having an affair with the computer girl. Of course, de Tohil Vaca was a superb actor, but nevertheless Alex found the expression rather disquieting. He tried not to show it.

"Quite all right," he said automatically. "Of course you realize that having left so little time for negotiation means that you'll have to accept our terms as stated."

"Not at all, not at all. In the first place, my dear Alex, you know as well as I do that a strike by your men would be illegal. In our present society we could no more allow it than a wooden city could allow a fireman's strike."

"I'm quite prepared to go to jail if I have to. You can't jail the whole union." He did not go on to add that winning this strike would also win him de Tohil Vaca's office in the next administration. The Secretary knew well enough what the stakes were, which was the real reason why no negotiation would have been fruitful; the strike was absolutely inevitable.

"I'm not threatening you, I assure you. No, really, that issue has in reality become quite irrelevant. You see, Alex, there have been new developments of which you're not aware. They are of sufficient importance so that we no longer care if your men quit work and never go back."

"That," Alex said, "is pure nonsense. The only justification you could have for such a statement would be the development of machinery which made all my men obsolete. I know the technology at least as well as you do, and no such advance has occurred. And if such machines exist in theory, you can't possibly get them into production and on the job fast enough to prevent a disaster if we strike—not even if in theory they're capable of solving the entire problem."

"I imply no such thing," de Tohil Vaca said, with a calmness that seemed to conceal a certain relish. "We have not solved the problem. Quite the opposite. The problem has solved us."

"All right," Alex said. "You've produced your effect. Now, just what are we talking about?"

The Secretary leaned back in his chair and put his fingertips together. "Just this," he said. "We cannot 'dispose' of our wastes any longer. They have tipped the geological scales against us. The planet is breaking up. The process has already started, and the world will be effectively uninhabitable before the next ten years have passed."

The Secretary was watching Alex narrowly, and actor or no actor, could not prevent a faint shadow of disappointment from flitting over his face; Alex had only smiled.

"Good heavens, man," the Secretary said. "Do you hear an announcement like that every day? Or are you utterly without imagination?"

"Neither," Alex said. "But as it happens, I did hear a very similar statement less than twenty-four hours ago. It didn't come from quite so august a source, but I didn't believe it then, and I don't believe it now."

"What," de Tohil Vaca said, "would you think I stood to gain by making it?"

"I can't imagine. If you were another man, you might be hoping I'd carry this story back to the union and get the strike called off. Then, when the end of the world didn't come through on schedule, I'd be destroyed politically. But you know I'm not that credulous, and I know that you know you wouldn't dare to use such means; it'd destroy you, too."

"Well, at least we are now out in the open," de Tohil Vaca said. "But the fact is that I mean every word I say, and furthermore, I'm prepared to offer you a proposition, though not at all of the kind you thought you came here to discuss. To begin with, though, I had better offer you my documentation. You have, no doubt,

noticed the Brooklyn earthquakes."

"Yes, and I know what caused them," Alex said, feeling suddenly, unexpectedly grateful for Fan's passionate lecture of the preceding day. "It's a residuum of deep-well disposal."

The Secretary looked openly astonished. "What on earth is that?" he said. "I've never heard of it."

"I'm not surprised. It hasn't been widely used in a long time. But back around 1950, some private firms began disposing of liquid wastes by injection into deep wells—mostly chemical companies and refineries. Most of the wells didn't go down more than six thousand feet and the drillers went to a lot of trouble not to get them involved with the water table. Everybody liked the idea at the time because it was an alternative to dumping into rivers and so on.

"But then the Army drilled one twelve thousand feet down, near Denver. They started pumping in 1962 and a month later, after only about four million gallons had gone down, Denver had its first earthquake in eighty years. After that, the tremors increased or decreased exactly in phase with the pumping volume. There's even a geological principle to explain it, called the Hubbert-Rubey Effect."

"My word," de Tohil Vaca said, taking notes rapidly. "What happened?"

"Well, nothing for a while. More than a hundred such wells were in operation by 1970, mostly in Louisiana and Texas. But by 1966 somebody had noticed the correlation—which was pretty sharp because the Denver area had never been subject to quakes before, and the quake zone was right underneath the Army's arsenal—so the Army stopped pumping. The quakes went on for another eighteen months—in fact, the biggest one of all was in 1970—but then they began to die back.

"And that's my point. The injection system was outlawed in most states, but there are still eight of them in operation in Pennsylvania, pumping into a strata system only marginally suited for them, and another right out here in Brookhaven, which is totally wwsuited for it. That brackets Brooklyn neatly—and unlike Denver, Brooklyn always has been subject to slight temblors. So there's your answer: cap those wells, and as soon as they get back into equilibrium again—which will take as long as it takes, eighteen months only applied to Denver—then, no earthquakes."

The Secretary dropped his stylus and stared at Alex in frank admiration.

"My word," he said again. "That's the most ingenious theory I've heard in years. I do seem to have underestimated you, after all."

"Well, it isn't entirely mine," Alex admitted. "The man I talked to yesterday thinks that once you trigger an earthquake, you can't untrigger it. But the Colorado experience shows you can."

"Even if you can," said de Tohil Vaca, "I regret to say that the theory, while elegant, is also irrelevant. The real process is something quite different, and absolutely irreversible. It's the greenhouse effect that's responsible—and I hope you'll pardon me if I read from notes here and there; I am no scientist."

"Go ahead."

The Secretary opened a folder. "You know the Arctic ice cap is gone. But that's minor; it was only pack ice. The real problem is down south. There are unthinkable billions of tons of ice over the Antarctic continent—which is volcanic, as Mount Erebus shows. Now the first effect of letting up the pressure of all that ice is that it changes the isostatic balance of the Earth's crust, which would be bad enough, but there's worse to follow.

"There's a thing called precession of the equinoxes, which means that not only does the Earth rotate on its axis, but the axis of rotation also moves around its own center, like the secondary motion of a top when it's slowing down."

"I know about that. It means the poles describe a small circle, so we don't always have the same pole star. But I also know just one of those circles takes twenty-five thousand years."

"Yes, but that's geologically a pretty short time. And bear in mind that swinging all that concentrated ice around and around represents an enormous amount of energy—of momentum. If you melt the ice and distribute its mass as water evenly all over the globe, where does the energy go?"

"I'm not a scientist either," Alex said. "But as an engineer, I'd predict that it'd show up as heat."

"And so some of it will—in lots of heat. Good-bye, fish, just for a starter. And the sea-level rise will total thirty-three feet when all the ice is gone. But there's still more, Alex. Besides the precession, the top wobbles. It used to be called the Drayson Effect, but I gather that everybody sneered so hard at poor old Drayson, whoever he was, for proposing it, that when they discovered the wobble was real, they gave it another name; it's called Chalmers' Wobble now. It shows up in a cyclical disturbance of the polar path, the equinoctial path."

"And how long is the cycle?"

"Fourteen months."

"Fourteen months! Are you sure you've got that right?"

"That's what it says here," de Tohil Vaca said grimly. "And it's been known for twenty years that any major variation in the cycle is a signal that a very large strain release is about to occur somewhere in the crust. Lately, my dear fellow, the polar path has been wobbling irregularly all over northern Canada."

"The outcome is going to be vulcanism on a scale never seen before in the lifetime of man. I'm told that we are in for a new era of mountain-building, the first since the Rockies were thrust up. That will bury all our old cans and bottles and junked cars very nicely—but there'll be nobody left around to rejoice."

"My God," Alex said slowly. "And obviously it's irreversible—we can't take the carbon dioxide and the other heavy gases out of the air. We've changed the climate, and that's that. The ice is going to go right on melting. Faster and faster, in fact, as more energy's released."

"Precisely."

Irrationally, Alex felt a momentary flash of pleasure at being now able to tell Fan of a disaster that made Fan's hypothesis look like a mild attack of hiccups. The moment's elation vanished in a horrible nightmarish sinking of every recognizable human emotion except terror. He could not doubt his erstwhile antagonist; the whole sequence, even he could see, flowed inevitably from as fundamental a law as the conservation of energy. Trying to keep his voice from shaking, he said,

"And yet you said you had a proposition."

"I do. We are going to evacuate some people to the Moon. We still have the old commercial ships, as well as military vehicles, and we've been maintaining the bases, mostly because the Soviets have been maintaining theirs. Of course there's no hope of mankind's thriving on the Moon, but it's at least a tenable way-station until we can organize a further jump to Mars, which we just might make livable."

"And what about the Soviets themselves?"

"They'll just have to think of the idea for themselves," the Secretary said. "We certainly aren't going to propose it to them. Personally, I'd a lot rather outnumber them when it's all over; lunar bases are terribly vulnerable."

"Hmm. How are you going to choose our people?"

"Partly by need, partly at random. We want people of proven ability and necessary skills; but we also want to minimize genetic drift, which I'm told will be a real danger in so small a population. Myself, I'm not even sure what it is. So we're picking out a small group of technicians and known leaders, and we're issuing each of them ten tickets, which they can hand out to anyone they please."

"Without restrictions?"

"There are several restrictions. Secrecy is one, though of course we know we can't maintain it for long. Another is baggage: twenty pounds per person, which has to pack into five cubic feet. But the most important one is that in every group of ten there must be six women. Under the circumstances, men are almost unimportant. If they weren't our main repository of technology, and of creative energy—and of course there's the high possibility of accident—we'd make the ratio nine to one, and still think it too high."

"No children, I suppose?"

"No children. We want skills plus genes. And potency. We'll generate children later, when we're sure we can take care of them. We can't ship them. So if any of your friends want to give up their seats for their bairns, you will have to tell them No."

"I can see myself doing that," Alex said.

"I hope you can. I'm sorry, Alex. It's ghastly, to be sure. But it's the way it's going to have to go."

An easy policy for an obvious homosexual like de Tohil Vaca to adapt to—or a childless man like Alex. But de Tohil Vaca was not going to have to tell anybody No; he had passed that obligation on. To, among other people, Alex.

"The system distributes the moral problem nicely, too," Alex said bitterly. "Every man a god to his friends."

"Would you rather have the Administration choose everybody?"

The answer to that was obvious. "What about livestock?"

"Oh, these vessels will be arks—animals, seeds, everything. Why? Have you got pets?"

"Two cats."

"We're taking ten. If your cats are of opposite sexes and haven't been altered, I'll issue you a ticket for your two; you're the first to ask, and with cats we don't care about breeds—they all reduce to alley cats in one crossing anyhow. Naturally they'll have to pass a medical exam, and so will your friends. These tickets, by the way, are being issued by commercial agencies with no connection—no visible connection—to the government. That cover won't last long, so don't fail to apply for yours instanter."

"I won't. But there must be a price for all this. There always is."

"My dear fellow," de Tohil Vaca said, "I told you we valued you. I do hope you'll call off the strike, as an obvious and complete irrelevancy now; just help us keep the garbage down to a dull roar until we get the ships off, and don't, if you'll pardon me the pun, rock the boat. No other price, except for the tickets, which are the same price the old spacelines used to sell them for to the Moon: a thousand dollars—ostensibly, round trip. That's a part of the cover."

"I see. Well, many thanks." Alex arose, hardly seeing his surroundings. The audio system was still playing that damned tune, which he had always hated. At the door, he turned and looked back.

"Mr. Secretary—you're going, of course."

"No, I am not," de Tohil Vaca said, his pleasantly vapid face suddenly turning to stone. "I am the man who failed to prevent this horror, as I was charged by my office to do. My presence on the Moon would dissolve the last chance of man in the bitterest kind of political strife. Under no circumstances would I introduce such a serpent into this rock garden." Then, suddenly, he smiled. "Besides, I want to see the end. When Ragnarok comes, there ought to be somebody on the spot who is capable of appreciating the spectacle."

When the door closed behind Alex, he felt, aside from all his other burdens, somewhat less than three inches high.

On the way back to his own office, Alex found himself wondering how Fan would take it. He had almost automatically decided that Fan would have to be one of "his" three men. There was nobody of his own sex that Alex loved better, and besides, the man was omni-competent—almost as much so as he made himself out to be. (Hmm... John Hillary, Alex's assistant, had better go, too. He was an expert on pressure systems, a good electronicist on the side, easy to get along with, and a vigorous forty ae.)

There was more than a little irony in Fan's being an obligatory survivor. He had lived an astonishingly full life, starting from the utmost poverty, leaving home at fourteen without a penny in his pocket, turning all kinds of odd jobs in a world where such jobs hardly existed any more, devouring the public library in every town he visited, eventually becoming a highly successful journalist until he got bored with the hours the job required him to keep, cranking out small but socially useful inventions at odd moments, and enjoying himself hugely every step of the way. The lives of most men, even when looked back at from the vantage point of half a century, by comparison resembled nothing so much as the slow growth of a forgotten turnip. Anything Fan accomplished from here on out would have to be regarded as a bonus.

And there was another side to the matter which might be even more important. Though Alex was nobody's adventurer, he had once faced death himself, but in retrospect it now seemed to have been very nearly a false alarm—an undifferentiated tumor of the mastoid process, of the same general class that struck many people these days, which had scared hell out of everybody concerned... and then turned out to be as easily operable as a hangnail, or almost.

Fan's experience had been quite different: he had been attacked by a mutated leukemia virus which had nearly cleaned out his bone marrow as thoroughly as if it had been sucked by a dog, leaving him virtually without any of the tissues necessary for generating blood cells. This had been followed, with utter inevitability, by a whole series of secondary infections for which it had been impossible to give him antibiotics—or, for that matter, even aspirin—because his natural immunity to any such foreign substances had been knocked out as well. And there was no treatment for the virus itself.

That siege had frightened nobody, for there was no doubt whatsoever that Fan was going to die. Fan's response was simply, "No thank you; not yet."

And so he hadn't. There was no explanation for that but Fan's own, which was preposterous: he claimed that he had directed his remaining blood-forming tissues to regenerate and get busy making antibodies against the virus, on pain of his extreme displeasure, and so of course they had. If you did not believe this analysis, Fan politely invited you to come up with one of your own.

It had become a moderately famous case history, and there were a good many medical research people who yearned for a few drops of Fan's blood to analyze for the antibodies. They had to go right on yearning, for any fooling around with Fan's blood was verboten. For nearly a year after his recovery, his attending physician had almost literally hovered over him night and day, waiting to slap a patch on him if he so much as cut himself shaving, until Fan tired of that too and told him to get out and go treat somebody who was sick, for God's sake.

That had all happened some years ago, but as a result Alex knew that few people in the world were as well equipped by temperament and by intelligence as Fan was to face the coming slaughter. If it had turned out that he had to stay behind, he would have watched the process with grave interest, and very likely some aesthetic pleasure. Rather like de Tohil Vaca, Alex thought; except that he had more confidence in Fan's ability to maintain his detachment to the end.

Maybe Fan ought to be left off the ship and asked to command the rock-tides to turn back. He would enjoy it so hugely if they did.

Now, who else? Juli, certainly; he would exercise that choice only because he had been given the power to do so and for no other reason, like an attorney's privilege for arbitrary challenge of a juror after all his challenges-for-cause had been used up. But the women were not the heart of the problem yet, for even with Juli ruled in, he had five more he could choose.

But since Fan had to go, and Hillary, he was left with only one more man. And very few of his male friends, he realized grimly, were really good for anything but amusing him... or, to put the matter more bluntly, flattering him and eating on his credit. Merlyn could be ruled out at once; he had no talents whatsoever, not even little ones, and besides had a vicious streak which would be dangerous in a small community. Grindford was a somewhat pleasanter person, with a demonstrated talent for survival; but what else could he do besides duck when he saw the egg approaching the fan? Not a damn thing, except brag about how irresistible he was to women. Even if the brags were true, which Alex gravely doubted, a great seducer would be nothing but a living fossil on the Moon, under the conditions de Tohil Vaca had specified.

Those two eliminations were easy, but from there on out the pain set in. All of the remaining men in the luncheon circle were creative in some slight degree—apparently equally slight, and all utterly negligible, until you examined them each on their merits under the new situation. Take Bang JOhnsund, for instance : who on the moon could use a talent for writing the most moronic and endless kind of 3V serial? The answer might well be, everybody; surely, under such confined and near-hopeless conditions, a talent for taking people's minds off their troubles might turn out to be of tremendous value. Much the same kind of value might inhere in Polar Pons; he entertained people, no, more, he told them things about their world that they needed to know in such a way that they thought they were being entertained while in fact they were learning. The fact that he had to simplify the information he imparted so well beyond the point of caricature—without knowing that he was doing so—counted against him, but he might shape up under pressure; almost everyone did.

Goldfarb Z and Tighe were only superficially easier cases. To be sure, the subject of Goldfarb Z's Cantos was unknown to everyone, including himself, since he had sworn not to develop the invisible ink he had been writing it in until he had finished the work. After that, he would read it, and probably change the title in the light of what he found; the present title was only a sort of running head or slug. But he was a poet, with a fair record of production behind him before he had undertaken the completely hermetic opus. The same could be said of Will Emshredder, though he worked in multimedia and thus—if one could judge by Goldfarb Z's working title—was of a completely opposite school. Obviously the lunar colony could not afford to be without a poet, but did Alex have to choose between schools as well, or was it only the genes for creativity that mattered? And Tighe was a scholar, and there again a propensity for scholarship might be more important than the fact that Tighe's particular field of study had no social utility on Earth even now, and would completely cease to exist on the Moon.

Although he had never given the matter any thought before, Alex had the feeling that poets were scarce commodities, whereas almost any other ten-man cadre might come up—literally—with a scholar. Which poet, then? Goldfarb Z, though gregarious, was also a man of almost impenetrable reserve; but even after all these years, Alex could not say he knew Emshredder any better, because the man was almost fumblingly inarticulate except when he was in front of his consoles. He thought he did not know which of the two he liked better, which was some small advantage, in that it made for at least a little impartiality. And sheerly on instinct, he felt that Will Emshredder had the larger talent. Very well; he should be the third man.

And promptly upon this decision, Alex found out what he had never known before: that it was in fact Goldfarb Z whom he liked better. It was astonishing how acutely painful the discovery was.

The pain became worse when he came to consider the women. Rosasharn had a limited talent—how limited, he had no way of assessing—but she was somewhat beyond her child-bearing years, and decidedly ugly to boot; taking her along would be a betrayal of one of the essential premises of the escape, if Alex had understood de Tohil Vaca on that point. By the same token, Girlie Stonacher was young, pretty, promiscuous and provenly fertile; she would fit into the proposed colonial society like a key into a slot, and furthermore enjoy it hugely. Count her in. The same terms, with some minor reservations as to what era one was thinking about, had been said—Alex did not know with how much truth—of Irene Pons; but how, how, how could he give Irene a ticket and refuse one to Polar? And would Irene go without him? And if she did, would she not feel the guilt of her husband's death all the rest of her life, regardless of the fact that it would be in no way her fault, and hate Alex for forcing the choice upon her?

Worse was to come. He realized that he had been assuming all along that Fan's wife Gradus would also be among the Chosen, not specifically because she was Fan's wife but because she was the quickest intelligence among all the women, as well as being the most beautiful. But in both these departments, Goldfarb Y was not far behind and should surely be included; and the one emotion Goldfarb Z had ever shown in public was a passionate devotion to her. Alex was therefore in the position of having to part them forever, while at the same time arbitrarily taking along his own Juli, who, though pretty and sweet and good in bed, had a brain about the size of a truffle, and no talent he had ever been able to discover.

This was a more painful case than that of Polar and Irene Pons—not to them, but to Alex. The numbers simply and inexorably ruled Polar out; Alex was entitled to only one man out of the group, and he was morally certain that, having included one administrator and one engineer, that third man should be a poet. But suddenly he thought he saw a way out. It was genes that counted, wasn't it? Wasn't it? And Will Emshredder had a daughter...

Slowly, feeling as though he were dividing his own soul in two, he drew a line through Will Emshredder's name and wrote down that of Goldfarb Z.

It had never occurred to him before that the reason God demands love of everyone is that He must feel overwhelmingly guilty.

The basement warehouse was huge, but there were not many echoes in it; the Chosen were very subdued about their baggage-checking. Juli examined her two cartons for the umpteenth time. Twenty pounds and five cubic feet had not turned out to be much, and in the end she had decided on taking almost nothing but keepsakes—and, of course, Splat! and Hausmaus, currently crouched in a carrier on the labeling table, from which occasionally issued low, hoarse cat-howls of protest. Presumably Alex's cartons, which had already gone out, had been more practical.

Of course her cartons were not all keepsakes, really. She had also put together the best approximation she could think of to a survival kit, consisting of small tools, a medicine chest, blankets, and a few other such items, including a nest of plastic containers—no matter where a woman went, she would find some use for those. She hoped the teddy bear wouldn't be discovered; it probably wouldn't show up on the fluoroscope, except for its eyes, and there were several dozen other buttons, all loose, in that box. She knew the stuffed animal had no business being in there at all, but it had been the only toy she had ever had.

Well, if she had forgotten anything important, it was too late to include it now. Reluctantly she shoved the cartons onto the moving belt, which would carry them to

the blimp for Rockland Spaceport. The cats ought to go now, too, but suddenly, seeing nobody else around her that she knew, she decided not to part with them just yet.

Where, above all, was Alex? Juli already had her reservation, but Alex had to confirm his own, and it was getting close to the time for the helicopter shuttle for today's flight (only the baggage went by blimp), on which they were both booked. He and the other eight people he had chosen, not without much agony, had been holding some kind of farewell party to the Earth, which she had chosen not to attend as likely to be entirely too painful. Had they all gotten drunk and lost track of the time?

She did not dare to go looking for him; suppose he should show up at the last minute and find her gone? But time passed on the big warehouse clock, and passed, and passed...

The elevator doors to the shuttle closed for the last time today. The endless belt stopped moving. There was nobody human left in the warehouse but herself.

They had missed the flight.

Halfway between panic and fury, she picked up the cat carrier, the contents of which had fallen asleep but now resumed its moans and squalls of despair, and marched off to a telephone booth, where she phoned, first of all, the ticket agent. For more than half an hour she got nothing but a recording telling her all the lines were busy, which she had fully expected. The secret was not yet out, at last reports, but all the same that office must be a madhouse; just the rumor (there had been no announcement) that commercial lunar flights were being resumed had generated a tidal wave of would-be tourists.

At last, she got through to a clerk. No, Dr. Stewart had not picked up his reservation. No, neither had Mr. ad Parnassum. Neither had any of the others.

Next, by citing the code formula which stood for (though the clerk did not know this) the real intent of the exodus, she reached the agent himself and made her plea.

'I'm-sorry-moddom, but you must understand that we have many standbys for each flight. Your seats were doubtless filled long ago.'

"You don't understand. I know we've missed this flight. What I want to do is transfer our reservations to the next flight."

'Tm-sorry-moddom, but our instructions are strict. We cannot under any

circumstances issue alternative tickets to no-shows."

"Now that's just silly. We weren't entirely no-shows. After all, our baggage is already on today's flight. What's the point of shipping all that baggage and then not sending the people it belongs to?"

"I'm-sorry-moddom, but I'm sure the people who took your seats will find some use for it."

"No, they won't." Juli began to cry, and at least half the tears were real. "No, they won't; it's almost all just keepsakes. Things that w-won't be valuable to anybody b-but us."

The agent had doubtless had to slosh his way through gallons of previous tears. "I'm-sorry-moddom, but regulations do not permit us to issue a second set of tickets."

"Oh, damn your regulations! Now listen, my... husband is the head of one of these groups of ten people, a, a cadre leader."

"There are hundreds of those, moddom. We are not allowed to treat them any differently than anybody else."

"But he's not just an ordinary cadre leader. He's somebody that Secretary de Tohil Vaca particularly wanted to go. The Secretary told him so, personally."

"I'm-sorry-moddom, but surely any faceless person could claim that over the telephone." In the background, people were shouting at him to answer another phone.

"If I were just anybody, how would I know the project code?"

"These things leak, moddom. Now if you'll excuse me—"

"Wait a minute," Juli said desperately. "Why would just anybody be asking for tickets under these particular names? You should have some sort of list with the names on them."

"Yes, moddom, we do, but for today's flight only. We cannot issue second chances."

"If you called the Secretary—" And then, right in the middle of this sentence, which in fact she did not know how she was going to end, she remembered that Alex's priority number was different from the secret project code number. She said: "My

husband has priority number FHGR-One."

There was a long silence, except for the dim pandemonium in the background. She could only pray that the agent was looking the number up.

At last he was back. "I have confirmed the priority, moddom. I am therefore issuing you two reservations for tomorrow's flight."

"Oh... thank God. And thank you, too."

"Please bear in mind, moddom, that this is the last chance. The last, the final, the ultimate chance. Are you sure you understand that?"

"Yes, I do," she said gratefully. Her relief was so great that instead of flipping the hang-up toggle, she hit the shower toggle instead, and was promptly drenched with salt water. She hardly noticed.

The panic ebbed, but she was still worried. There might, after all, have been an accident. They might have all been killed, or anyhow hospitalized, on the very eve of escape. Oh God. She called the Brackette de Poisson.

And God damn them, they were there. They were all there.

Now free to feel completely unadulterated rage, she left a message for them with the management, put on her gas mask, snatched up the cats, and stamped out to flag down a water scooter.

The eight were still there when she arrived (after parking the grumbling cat carrier in the expensive supermarket next door, by polite but firm request of the restaurant's manager)—the eight who had survived Alex's playing God: three males (Fan, Goldfarb Z, and a man she placed vaguely as an engineer from Alex's office) and five females (Gradus, Girlie, Goldfarb Z's wife Y, Polar Pons' wife Irene, and Will Emshredder's divorced daughter Evadne).

Scanning this much constricted remnant of the old crew, and registering just exactly who remained of it here, Juli realized that more than the pains of choice and of partings had been involved here. There had also been a considerable spectrum of selfless sacrifice. With the realization, her righteous indignation began to simmer down toward the slightly more manageable level of simple resentment.

They all had indeed been drinking, but they did not look drunk. On the contrary, they were steady, quiet, and somber. As for Alex, he did not look guilty, or even

contrite; only inexplicably sad.

"Why are you all just sitting here?" She demanded, but with much less vehemence than she would have believed possible only a few minutes ago. "Alex, I got us another reservation, I fought like mad for it, but you have to pick it up right now—we won't be able to get another!"

"I'm sorry, sweetheart," he said in a low voice. "You pick yours up if you want to. I wish you would. But we're leaving ours for the standbys."

"What?" she said, feeling dizzy. "Standbys? You're—you're not going?"

"No," he said, lower still. "We're staying here."

Juli felt as though she had been gored by two icicles. Then she at long last let the hysteria sweep through her. Blindly, she let them lead her to a chair. They all tried to comfort her, more or less clumsily—only the women thought to produce handkerchiefs—but the clouds had been gathering far too long to be checked now.

"And I, I p-packed everything so carefully—all the, all the things I loved—the things you g-gave me—"

"Sshh, dear," a woman's voice said. "It's all right."

"It's not all right, it's not all right! Now we'll not only die—we'll die without our things! Oh, Alex, I p-picked out a b-book for each of us—our tooth brushes—my t-t-t-t—"

The rest came out in a howl, about which she could do absolutely nothing. Pats rained gently on her from various angles, making her cringe and want to fight at the same time. She knew defiantly that that last word was going to have been "teddy bear" and waited for them to laugh; but nobody did.

The woman's voice said:

"Juli, love, it doesn't matter... really it doesn't. No matter how else we die, we all die naked."

Perhaps—she would never know—this truism would have done Juli no good at all had it come from any other source; but she just at this point recognized the voice as that of Girlie Stonacher, the last person in the dying world from whom she would have expected the consolations of philosophy, even of the tritest sort. She got herself under partial control with a humiliatingly juicy sniffle, and allowed the women to finish mopping her face.

Only then could she manage to look again around the circle, out of eyes she was sure were as red as her nose. After a pioneering hiccup, she said:

"Alex, why didn't you tell me? Instead of leaving me alone in that awful warehouse, getting scareder and scareder—while you sat here with all the friends we—"

"I did tell you, Juli," he said. "I remember telling you very distinctly. I even remember when, and where."

Juli still felt so frustrated and confused that under any ordinary circumstances she would have believed him gladly. After long suspicion of men in general, she had come to believe that Alex really did have an odd sort of trick memory, especially after drinking; where some of her previous lovers had had convenient blackouts, or at least blank spots where their promises had been lodged, he instead quite convincingly—to both of them—remembered things that hadn't happened at all, in particular things he hadn't told her but knew he should have, and hence readily admitted to. It had been a source of trust, though not one she would have felt comfortable explaining to anyone else, even a woman.

But these were not ordinary circumstances. "Alex," she said, "I don't believe you."

Clearly, this didn't surprise him. Instead, at last, he did look shamefaced.

"Well," he said, "Juli, the fact is, I didn't tell you. You see, I wanted you to go on that flight. I wanted you to have the chance, whatever I'd decided about myself. After all, we could still be wrong."

That did it. Juli's sorrow and hurt vanished; she was right back to being furious again.

"Wrong about what?" she fumed, clenching her fists until the nails bit into her palms. "Won't somebody in this high-and-mighty crew tell me why we're all committing suicide? I'd kind of like the chance to make up my own mind!"

"I told you so," Gradus said to Alex. "But you wouldn't listen to me."

"Juli," Alex said. "I can't explain it myself. I don't have the training, or the terms. And I couldn't quite face up to asking you to listen to hearing your life being explained away by Fan, with my consent. He's been wrong before."

"Do you believe him, Alex? Enough to stay behind?"

"Yes."

"Then I don't resent anything but your thinking that I'd want to go without you. Fan, explain it, will you? I'd really like to know. And somehow I'm not surprised to find you pronouncing our funeral oration. It seems sort of comfortable. Please speak, Fan, please."

"Thank you," Fan said. "I rise to the occasion."

But in fact he did not rise; he sat where he was, and spoke very quietly.

The only thing that puzzled me at first (Fan said) about our fairy friend de Tohil Vaca's theory—which made perfect sense otherwise—was the fact that he wasn't going along to the Moon. That didn't seem to be in character with what I knew about the man. I talked to Alex about it, since after all I only know the Secretary by reputation, and Alex seemed surprised by it, too.

Alex gave the Secretary the benefit of being a more complex man than he had seemed. I never give any man such credit until he's proved it by a lifetime of complex reactions. The Secretary's history didn't deserve it; his public history, it seemed to me, accurately reflected what little depths he had. He certainly had never struck me as a natural martyr.

So I looked at the theory again. The Secretary had also told Alex that he wasn't a scientist, and by God, on that second look, I found out why he'd said so.

The theory is right, mind you. But the Moon Project is wrong. The Moon is no safer now than the Earth is. As the ice melts and the two precessional movements of the Earth's axis get more and more out of synch, the Earth's center of gravity also is shifting. That will make the earthquakes even more violent, but we don't have to worry about that now; enough is enough; es ist vollbracht.

But in addition, the Earth-Moon system is a binary system—a pair of twin planets, or at least close enough to being one dynamically. Other planets have satellites bigger than the Moon: for instance, there's Saturn's satellite Titan, which is actually bigger than Mercury. But nowhere else in the solar system can you find a satellite which is a quarter the size of its primary.

One result of this is something we've known about ever since Herschel's time. The Moon raises very large tides on the Earth—that is, it exerts a significant amount of gravitational energy on the sea, the atmosphere, and even on the crust. Now, every action has an equal and opposite reaction, as poor old Newton told us, and

the reaction has to show up somewhere. And it does. It shows up in the Moon's angular momentum, so that the Moon has been gradually drawing away from the Earth for millennia. I forget the rate—something in the nature of a few hundred feet per year, but I could be wrong by several orders of magnitude.

Suddenly—very suddenly—there's going to be a lot more mobile water on the Earth for the Moon to affect. Result: the Moon's velocity in its orbit is going to increase, equally suddenly. Viewed on a geological time scale, it will be one hell of a lurch.

And at the same time, something still more drastic will be happening. Because the Moon is so big in proportion to the Earth, the Moon never has revolved around the exact center of the Earth. Instead, the two bodies revolved around a common center, which was inside the Earth, but not at the Earth's center.

Both these centers—the center of revolution of the twin planets, and the Earth's center of gravity—are now shifting, both independently and in relation to each other. This change will feed back to the Moon, too. And there is still some vulcanism on the Moon—enough to shake it up drastically, since compared to the Earth, the Moon is a low-density, rather fragile world. While new mountains are being built here at home, all the sheer escarpments of the Moon will be tumbling down on our colonies—those that great fissures in the surface haven't swallowed in advance.

I suspect that this process has already started, and that it's why the commercial flights to the Moon were canceled so arbitrarily five or so years ago. Or maybe not; I'm just guessing. If it hasn't started, it will surely start soon.

I wish with all my heart that we'd had the sense to seed one of our planets—or the stars, it could have been done—a long time in the past. Did you know there was a starship in the planning stage in 1965? Well, there was. Even then it was clear to some people that the Earth was too small and too vulnerable for us to risk the whole future of our race on it alone. But instead, we killed off spaceflight almost entirely—and that's that.

And so (Fan continued) in the end I agree with Juli. If I have to die, I too want to die with my things—under which I mean to subsume my world, my history, my heritage, my race. Not in some warren underneath a desert world that's fit for nothing but a quarry for tombstones. Naked we come into the world, but we do not all die naked; we have a choice. We can die naked on the Moon—or we can go to Hell with Shakespeare.

I don't find the choice very difficult.

There was a small color 3V in operation over the bar at the rear of the restaurant, which Juli had ignored from the beginning. If she had noticed it at all, she supposed she had assumed that it was tuned to a baseball game, the only channel 3V sets in bars ever seemed able to receive; and the audio volume was gratefully low.

But in the silence following Fan's peroration, she realized that the announcer was talking about the resumption of traffic to the Moon, and the imminent launching. Glancing up at the little hologram tank, she saw the ship that she and Alex were supposed to be on. It looked exactly like two raw onions, one white, one red, joined by a mutual sprout. It occurred to her that they would probably work better if they were boiled. The red sphere, the 3V announcer was overexplaining, was the power sphere, which had to be kept separated from the people, because of the radiation.

The vessel's immense size showed, however, by comparison with the crowd of spectators. There did seem to be a lot of them, held back only with difficulty by armed guards. The background murmur from them did not sound festive.

She felt tears beginning to come again.

"It seems so cruel," she said, almost to herself. "Luring all those people on such a hopeless journey. And so wasteful. Do you suppose the government really doesn't know? About the Moon?"

"Sure they know," Fan said. He reached for his beer bottle, but ten seconds earlier it had turned into counter polish. "They just don't care. Or maybe it's just that they've been lying to us for so long, they couldn't tell us the truth if they wanted to." Morosely, he mopped up his invention with his sleeve.

"Fan, that's a guess," Alex said. "And let me remind you, I do know de Tohil Vaca, and you don't, except by reputation, just as you said. I still don't think he's the villain you make him out to be. He knows there's a risk, and he told me—I think he told all the potential trippers—that there's a risk. He didn't say exactly what it was, but if he had, nobody would have wanted to go at all."

"And maybe," Goldfarb Z said, "he hopes that at least a few of the bases will survive, after all. That would explain the effort, the expense, the deception, and so on. Otherwise, why bother?"

Fan snorted. "Impossible... Herr Ober, another beer here!... And even supposing that... no, damn it, I want a glass bottle, not one of those dissolving ones... even supposing a few bases do survive, they won't have the resources, or the population, or the spirit to put together a second jump to Mars. If there are any survivors on the Moon—and I insist, it's impossible that there will be—they'll just die a little later of attrition. People can't hope if there aren't enough of them to keep each

other hoping."

"Fan, as a psychologist you're a pain in the ass," Irene Rons said. "There's one thing you have to give de Tohil Vaca. He's given his passengers the chance to roll the dice. Which is more than we've got the courage to do. And I'll bet he knew exactly how many of us would chicken out, too."

"I do not play," Fan said stiffly, "with loaded dice. But since you insist, I'll give de Tohil Vaca one gold star: He did say, more or less vaguely, that the dice were loaded. It's a limited form of honesty, but honesty it is."

"And decency," Juli said. "Even pity."

"Pity? Juli, I love you, but sometimes you're rather hard to follow."

"I mean, here I am, with Alex, and people I love around me—and I've even still got Splat! and Hausmaus. So—I mean, oh well, that's not so bad, after all. But for most of the people who're going on the trip... do you think they'd be going if they had anyone to love? Someone to help them look death in the eye? And for them, isn't it better to have a little hope? Better than just to stand around, waiting for the end, like so many snowmen waiting for a thaw?"

"By God, Juli," Goldfarb Z said softly, "I love you too."

"It's a nice notion," Fan said, "but it's Juli's alone, I'm afraid. That kind of motive doesn't ordinarily move governments into spending billions of dollars on a foredoomed project."

"What good is a dollar now?" Alex demanded. "And what else would be worth spending it on instead? Now? Not sewage, I can tell you that, and the Secretary knows it. He told me so, and damn bluntly, too."

Fan shrugged. "I can't quite see them breaking the thinking habits of a century," he said. "But on the other hand, it doesn't cost me a cent to give them credit for compassion. Blessed be thee, de Tohil Vaca."

There was another silence, underlined by the rumbling of the crowd at the spaceport, now sounding somehow ominous. By unspoken assent, they turned their chairs to watch the tank.

Juli found herself calm, resigned, washed out. She was even interested in seeing the takeoff, though such things had never interested her before; and not entirely because her "things" were on board. Goldfarb Z ordered another round of drinks.

A moment later, the floor twitched under them, like the hide of a horse trying to dislodge persistent flies. Bottles fell from the bar. The 3V image flickered, and the crowd roar from it swelled suddenly. Most of the customers at the bar made for the door, at speed, and almost everyone around the table sprang up. Chairs fell over.

Fan shot out one hand and grabbed Gradus by a wrist. "Sit down," he said. "Where are you running to?"

"That was an earthquake," she said glacially, "in case you hadn't noticed."

From the 3V the roar grew louder. Juli saw that the crowd was rushing the ship. Evidently, the secret was finally out. Then there was the dull sound of sneeze-gas grenades going off.

"Really, Fan," Goldfarb Y said, "it's better to be out of doors in an earthquake. Everybody knows that."

"If that was ever true," Fan said, "it doesn't apply any more."

There was a second shock, and the 3V gave up entirely.

"Damn," Fan said. "I wanted to watch that. Alex, how tall is this building?"

"Seventeen stories, but the elevators only go up to the fifteenth. If they're still running at all."

"The lights are still on."

"But supposing the elevators quit on us while we're up there?" Girlie said.

"Suppose they do?" Fan said. There was silence. He went on:

"Girlie, do you really care what floor you die on? Wouldn't you rather see the first survival ship leave—or whether or not the quakes and the mob even let it leave—than run around in the street like a mouse? Let's be human beings to the end, goddam it. I'm going up. The rest of you can suit yourselves."

"Me too," Juli said. But she shook Alex's hand with great determination.

And there below them was the Earth, and its wide sky of islands; and the towers of the city to the south. It was a bright day; they could see the fugitive highlights of the sun glancing off the canals of lower Manhattan. It was all quite beautiful. Juli

thought her heart ought to be breaking, but in fact she felt only a vast, free exhilaration. Soon it would all be gone; but she had never expected to outlive it. What filled her heart, instead, was something oddly like gratitude.

"There she goes!" Fan cried out suddenly, almost with joy. She felt his hand on her shoulder, turning her around to face toward the northwest. A thin, towering plume of pure white steam was rising slowly on the western horizon, rising, rising... For an instant, just above its tip, there was a splintery flash of metal. Then the plume began to twist and drift.

There was a strange sound from the little party on the roof, a little like a sob, a little like a cheer.

"They made it," Goldfarb Y said, like a prayer.

Then the building jerked like a whip under their feet, and the sound turned to screams and hoarse yells. Asphalt and gravel ripped into Juli's knees and palms. A roar floated up from the city, laced with still fainter screams, like the glints of sunlight on the water.

"My God," the nameless engineer was saying mechanically. "My God. My God."

Alex's hands grasped her, helped her to her feet, steadied her. The building was still swaying a little. Once more, they were all looking south.

Not far away—perhaps ten or fifteen blocks—a few small, old buildings were toppling and sliding down into rubble and dust, unheard in the general uproar. Juli scarcely noticed them, nor did the others seem to be watching that. Much farther downtown, perhaps in what had once been the financial district, or else from the waters of Red Hook or Park Slope, a thick, dense column of black fumes was rising toward the risen half-Moon, like a Satanic mockery of the trail of the vanished ship. It made a sound like the full diapason of some gigantic organ.

"Fissure," Fan shouted, in an otherwise perfectly neutral voice. "I do hate to see my predictions jump the gun like that. It might make people think I lack influence in the proper quarters."

"Your predictions, Fan?" Alex said ironically.

"Certainly. That break's in Brooklyn Heights or thereabouts. That's where I said it would open if the injection wells were responsible. So you see the Secretary and I were both right."

"How nice for you both," Gradus said, but for once there was no malice in her

voice. Of course she was all ready to die naked, having been dressing the part for many years; but no one else seemed at all alarmed any more. Irene and Evadne were weeping silently, but without even seeming to notice it.

The black fumes rose in the bright sky. Gradually, they parted at the top, and began to spread gently, parallel to the horizon, as if along some low air stratum. The striations fanned out a little to the west as they drifted; the hinge of that fan did seem to be focused somewhere over the near shore of Brooklyn.

"Temperature inversion," Fan said. "New York's last smog attack."

"Omniscient to the last," Gradus said.

"It's funny," Juli said. "I mean, it's odd. I never thought of it before."

"Of what?" Alex said, taking her hand.

"That everything means something special, no matter what it is, if you know it'll never happen again. Even smog."

The dark striations floated toward them, their shadows making broader stripes over the groaning city in the brilliant sunshine. Were they just parts of widening circles? Or had the prevailing winds also changed? Or—

The roof lurched again. Evadne, who had been standing closest to the parapet, would have gone over it had the unnamed engineer not grabbed her. A cornice fell off and went smashing down the setbacks toward the street.

"There won't be," Fan said gently, "any flight tomorrow. Good-bye, all."

The cats!

With a cry, Juli raced for the stairwell. Alex called after her, something about the danger and the power being off, but she did not care.

She was almost fainting with exhaustion by the time she reached the dust-choking, bombarded street, and another temblor threw her to her knees just in front of the smashed glass display windows of the expensive supermarket. Shaking her dirty hair out of her face, she got up again and staggered inside.

"Hausmaus! Splat!"

There was a dim cry. Inside, the cement and plaster dust was almost impenetrable, but she could see vaguely that the place had been looted before the last panic had struck. Not only were there cans, bottles, and packages lying where the shocks had thrown them, but there were also a number of half-filled string bags and two-wheeled pushcarts abandoned near the door.

"Here, kitty! Kitty, kitty!"

Three or four meows responded. Through her watering, gritty, gas-inflamed eyes she seemed to be seeing thousands of cats. And indeed there were a great many. The carrier was where she had left it, half buried under a pile of loose cornflakes, diet cookies, and other things that had burst out of fallen paste board packages; but the door had fallen open and it was empty.

Through the haze and the tears, she was able finally to make out that all those thousands of cats were actually only a store cat and four squealing, barely ambulatory kittens. Then she saw Splat!, who somehow had managed to scramble to the top tier of a display rack which still held a few canned goods. He was too fat to get back down by himself, or at least that seemed to be his theory, and Juli decided to leave him there for the moment. He would be no safer anywhere else, and as long as he was treed like that, she would at least know where to find him.

"Hausmaus? Hausmaus?"

There was another violent earth shock. The entire front of the store crunched down to about half its previous height, and masonry roared into the street in front of it. Overhead, parallel to the street, a beam burst through the plaster of the ceiling, one end hanging free. Instantly changing her mind, Juli grabbed Splat! and stuffed him back in the carrier, followed by a kitten who happened to be in reach, and latched the door.

Was there another way out of the store? Yes, a door that evidently gave into the lobby of the building. It was wooden and had split at the top; its frame was twisted.

"Hausmaus! Here, puss!"

Another shock.

"Juli!"

It was Alex. He was pounding on the door, which evidently was locked, jammed, or both. "Juli, Juli, where are you?"

There was the sound of a heavier blow, as if he had kicked the door. Juli tugged

frantically at the knob. It would not give.

He kicked the door again, and almost at the same time, there was another tremor. Part of the bottom panel fell out of the door. Juli dropped to her hands and knees, and found Alex facing her on the other side in the same position. He could not see her, however, for blood was streaming into his eyes from a slash which ran diagonally across his forehead and up over his scalp.

"Alex, here I am!"

She heard Splat!'s hoarse Siamese cry behind her, and then he was clambering clumsily over her calves. Evidently the door to the carrier had come open again.

"Juli—"

She reached out for Alex. As her hand touched his cheek, there was still another shock, and the free end of the ceiling beam began to fall, slowly at first. Juli felt the soft, familiar thump of Hausmaus landing on his frequent perch between her shoulder blades, and

(strange as it looks, but this is the end of this story (no dot), and strange words in this text are not errors)

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